

REMARKS

Claims 1-10 and 13-42 are pending in the application. Claims 17 and 35-42 are allowed. Claims 1, 5, 10, and 14 are currently amended without prejudice. New claims 43 and 44 have been added. Support for the amendments can be found throughout the specification. Specifically, support for the amendments to claim 1 can be found, for example, in original claim 10 of the specification. Support for the amendments to claim 14 can be found, for example, at paragraphs [0065] and [0075]. Support for new claim 43 can be found, for example, in paragraph [0097]. Support for new claim 44 can be found, for example, in paragraph [0068]. No new matter is added.

In light of the amendments and remarks herein, which the Applicants believe place the claims in order for allowance, reconsideration of claims 1-10 and 13-42, and new claims 43 and 44, is respectfully requested.

Allowable Subject Matter

Applicants note with appreciation the allowance of claims 17 and 35-42.

Rejections Under 35 U.S.C. 103(a)

Claims 1-8, 10, 14, 15, 16, 18-22, 26, 27-32, and 34 are rejected under 35 U.S.C. §103(a) as being unpatentable over WO 98/06345 to Chen et al. ("Chen '345") in view of U.S. Patent Appl. Publication US2002/0049483 ("Knowlton"). Claims 1, 13, and 24 are rejected under 35 U.S.C. §103(a) as being unpatentable over USP 6,862,771 to Muller ("Muller") in view of U.S. Patent Appl. Publication 2003/0113684 to Scott and further in view of Knowlton. Claim 9 is rejected under 35 U.S.C. §103(a) as being unpatentable over Muller in view of Scott and further in view of Knowlton and further in view of USP 5,133,102 to Sakuma ("Sakuma"). Claims 23 and 33 are rejected under 35 U.S.C. §103(a) as being unpatentable over Muller in view of Scott and in view of Knowlton and further in view of USP 4,33,197 to Kuris ("Kuris"). Claim 25 is rejected under 35 U.S.C. §103(a) as being unpatentable over Muller in view of Scott and in view of Knowlton and further in view of USP 5,658,148 to Neuberger et al.

While Applicants disagree with the claim rejections, in order to expedite prosecution and without prejudice to their presentation in continuing applications, Applicants have amended independent claims 1 and 14.

Independent claim 1, and dependent claims 2-10, 13, 15-16, 18-26, and 43

As amended, independent claim 1, and claims dependent thereto, recite “a *diagnostic sensor* coupled to the body; and a controller which controls the radiation emitter *based on signals from the diagnostic sensor*.” Support for this amendment can be found throughout the specification, and specifically in original claim 10 and paragraph [0097]. Accordingly, no new matter is added.

Both Chen USP 5,445,608 (“Chen ‘608”) and Chen ‘345 are directed to methods and apparatus for performing photodynamic therapy (PDT). Chen discloses applying a photoreactive agent to the patient prior to light therapy, and then employing light with “substantially the same range of wavelength or waveband as an absorption waveband of the photoreactive agent” to destroy “disease-causing organisms that exist along the gum line ...which preferentially absorb the photoreactive agent.” (See, Chen ‘345 Abstract).

None of the Chen references, however, discloses a diagnostic sensor as recited in amended claim 1.

On page 3 of the Office Action, Chen USP 5,445,608 is cited for disclosure of a diagnostic sensor: “The sources may be controlled by monitoring the temperature rise of the tissue (diagnostic sensor).” However, the temperature monitor of the Chen device is not the same as the diagnostic sensor recited in claim 1. The Chen reference merely discloses “monitoring a temperature of the treatment site *by determining a voltage-current characteristic of the LED(s) or LD(s)* during a time when the LED(s) or LD(s) are not producing light, which yields a temperature of surrounding tissue, or immediately after or while the LED(s) or LD(s) are producing light, which yields a temperature of the light source.” (See, Col. 4, lines 52-60.) The stated purpose of monitoring the temperature is to control tissue temperature during the

treatment. (See e.g., Chen Col. 17 lines 1-48.) Thus, the temperature sensor in Chen referred to in the Office Action controls treatment parameters, and is not serving as a diagnostic sensor. In contrast, amended claim 1 recites a sensor that serves as a diagnostic sensor.

Nor does Knowlton disclose the type of sensor recited in amended claim 1.

Page 5 of the Office Action states that in Muller “a detector is disclosed for sensing reflected radiation. This detector is interpreted as a diagnostic sensor. (Col. 2, lines 38-65).” In contrast to the claimed invention which discloses “a controller which *controls the radiation emitter based on signals from the diagnostic sensor*”, Muller merely discloses a “signaling means.” The signaling means does not control the radiation emitter. Rather, signaling means 178 provides a signal to the user. It is provided “to signal the presence and/or absence of biological deposits on a tooth surface, for example a light or buzzer etc.” (See, Col. 15, lines 1-8). In other words, Muller does not teach or suggest a controller that would employ signals from a diagnostic sensor for controlling a radiation emitter.

Accordingly, claim 1, as amended, is believed to distinguish patentably over the cited references. Because every limitation of an independent claim is imported to dependent claims, claims 2-10, 13, 15-16, and 18-26, and new claim 43 are also patentable.

Independent claim 14, and dependent claims 27-34

As amended, independent claim 14, and claims dependent thereto, recite, among other elements, a handle coupled to the body; and at least one thermally conductive element configured to extract heat from the emitter, wherein the thermally conductive element is thermally coupled at one location to the radiation emitter and at another location to a portion of the handle so as to transfer heat generated by the emitter to the handle. Support for the amendments to claim 14 can be found throughout the specification, and specifically at paragraphs [0065] and [0075]. Accordingly, no new matter is added.

The cited references fail to teach a thermally conductive element that is thermally coupled at one end to a radiation emitter and at another end to a portion of the handle so as to

transfer heat generated by the emitter to the handle.

Muller does not teach a thermally conductive element thermally coupled at one location to the radiation emitter and at another location to a portion of the handle to transfer heat from the emitter to the handle. In fact, Muller is not concerned with heat generated by its light sources, nor does it teach any heat dissipation means, as conceded by the Examiner.

Scott generally describes a heat sink for LEDs in a dental device. It does not, however, teach or suggest, utilizing the handle of such a device for heat dissipation, much less employing a thermally conductive material to facilitate transfer of heat from the light emitters to the handle.

Thus, independent claim 14 is believed to be patentable over the cited art. Because every limitation of an independent claim is imported to dependent claims, claims 27-34, and new claim 44 are also patentable.

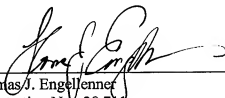
CONCLUSION

In view of the above amendments and remarks, Applicants respectfully request reconsideration and allowance of the application. In the event that the amendments and remarks are not deemed to overcome the grounds for rejection, the Examiner is kindly requested to telephone the undersigned representative to discuss any remaining issues.

Respectfully submitted,

NUTTER McLENNEN & FISH LLP

Date: July 09, 2007



Thomas J. Engle
Registration No: 28,711
Attorney for Applicants
World Trade Center West
155 Seaport Boulevard
Boston, MA 02210-2604
Tel: (617) 439-2948
Fax: (617) 310-9948